

Remarks

Claims 1-24 are currently pending in the Application. By this Amendment, claims 1, 2, 4-11, and 13-24 have been amended, and claims 3 and 12 have been cancelled. After entry of the Amendment, claims 1, 2, 4-11, and 13-24 remain pending.

I. Objections to the Specification

The Examiner has objected to the specification because of various informalities. The paragraph on page 10, lines 17-27 has been amended to ensure that the specification accurately reflects the illustration of Fig. 2B. The paragraph on page 12, lines 3-23 has been amended to more explicitly define the variables R_2 and R_3 . Applicant notes that prior to the Amendment, variable "R" was defined in this paragraph as referring to a radius – specifically, "radius R_v " referred to the radius of crankshaft V. The amended paragraph defines R_2 as the radius of pulley 2 and R_3 as the radius of pulley 3. Because this nomenclature follows the convention used throughout this paragraph, no new matter has been added. The paragraph on page 21, lines 10-20 has been amended to correct a typographical error.

II. Objections to the Claims

The Examiner has objected to claims 1, 3, and 6 because of various informalities. Specifically, the Examiner requested clarification in the claim regarding the crankshaft (V) and the shaft of the alternator-starter in claims 1 and 3. The Examiner also requested clarification of the recitation of "the grooves of a pulley" as recited in claim 6. Appropriate amendments have been made to claims 1 and 6. By the Amendment, subject matter from claim 3 has been incorporated into independent claim 1, and claim 3 has been cancelled.

III. Claim Rejections – 35 U.S.C. § 112

Claims 10-11 and 22-24 stand rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Particularly, the Examiner argues that the terms “unfastened” and “unfastenable” are used in these claims in a way that may differ from the commonly accepted meaning of the terms. The Examiner suggested amending the claims to use the terms “disengaged” and “disengagable” instead. Such amendments have been made. Therefore, Applicant respectfully requests withdrawal of the § 112 rejection.

IV. Claim Rejections – 35 U.S.C. § 102

Claims 1-6 and 10-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pub. No. 2002/0117860 to Man et al. Independent claim 1 has been amended to incorporate subject matter from dependent claims 3 and 12. Amended claim 1 recites in part: “a two-state coupling device . . . ; and a first (2) and second (3) pulley coaxial with said shaft (1) of the alternator-starter (ATD), . . . wherein the two-state coupling device is arranged between the first (2) and the second (3) pulleys and includes at least one coupling element (10) that moves longitudinally parallel to the axis of the shaft (1) of the alternator-starter (ATD) between two positions corresponding to the first and second coupling states, respectively.” Man does not teach or suggest at least these limitations of claim 1.

Man describes a power train for a motor vehicle that includes a combustion engine, a clutch or other torque-coupling device, a transmission, and an electro-mechanical energy converter that is operable as a motor and as a generator (Abstract). The electro-mechanical energy converter is coupled to the output shaft of the combustion engine through a torque transfer device with at least two rpm ratios that automatically set themselves according to whether the vehicle is operating in a start-up mode or in a driving mode.

In rejecting claim 12 (the subject matter of which has been incorporated into amended claim 1), the Examiner cites two different rotary transfer devices described by Man and illustrated in Figs. 4 and 5. The rotary transfer device described in Fig. 4 is mounted to the

driving shaft 303 and operates with two belt drives. The rotary transfer device automatically shifts between two transfer ratios depending on the direction of the torque flow (§ [0093]). The example shown in Fig. 4 includes two separate overrunning clutches 322 and 320 which correspond to each belt pulley 321 and 334, respectively. The example illustrated in Fig. 4 does not include a two-state coupling device that “moves longitudinally parallel to the axis of the shaft of the alternator-starter.”

Conversely, the example illustrated in Fig. 5 includes only *one* pulley and, therefore, cannot teach a two-state coupling device arranged between a first and second pulley as claimed. The example of Fig. 5 has a dual-ratio rotary transfer device 409 mounted on the driving shaft 403 by means of a supporting flange 438. The speed transfer is obtained by way of a planet gear mechanism (planet carrier 417). In the “starter mode,” the planet gear 417 is opposed by the driving shaft through damper device 439. Ring gear 416, because of its helical gear profile, is pushed away from the driving shaft 403 to establish a form-locking engagement between the prongs 416b and 416d on the ring gear 416 and housing 415 (§ [0101]). After the engine has started, the torque originates from the driving shaft 403 so that ring gear 416 is pushed axially toward the side of the driving shaft to cause a form-locking engagement between the prongs 416 on the ring gear 416 and the cut-out 417b of the planet carrier 417 (§ [0103]).

The purpose of the ring gear in the example of Fig. 5 is to switch the rotary transfer device between its two possible transfer ratios based on the operating mode (i.e., “starter mode” or “started mode”). In “starter mode,” the ring gear does not rotate since it is in form-locking engagement with the housing 415. In “started mode,” the ring gear rotates.

In rejecting claim 13, the Examiner has combined elements from the two separate examples illustrated by Man in Figs. 4 and 5. However, these examples are designed for different purposes and perform different functions, and, as such, the elements of the two examples are not interchangeable. The example of Fig. 4 achieves two different transfer ratios for two separate belt drives by allowing one pulley to overrun freely, depending upon the direction of the torque flow, without affecting the speed of the drive shaft (§§ [0093], [0095], and [0096]). The example of Fig. 5 achieves two different transfer ratios for the same belt drive depending upon the direction of torque flow of the belt drive (§ [0103]).

The single belt system of Fig. 5 cannot be directly substituted for the dual belt drive system of Fig. 4. Furthermore, both of the rotary transfer devices taught by Man are coupled to the drive shaft and, therefore, do not include “a first (2) and second (3) pulley coaxial with said shaft (1) of the alternator-starter (ATD)” as recited in claim 1.

For these and other reasons, Man does not disclose the subject matter defined by independent claim 1. Therefore, claim 1 is allowable. Claims 2, 4-11, and 13-24 depend from claim 1 and are allowable for the same reasons and also because they recite additional patentable subject matter.

V. Claim Rejections – 35 U.S.C. § 103

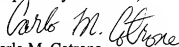
Claims 7-9, 22, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of U.S. Patent No. 5,539,286 to Brinkmeyer et al. Claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of U.S. Patent No. 5,305,719 to Clark et al. and further in view of U.S. Patent No. 3,200,919 to Lanigan et al. Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of Clark et al. and Lanigan et al., and further in view of U.S. Patent No. 4,526,257 to Mueller. Claims 18, 19, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of Clark et al. and Lanigan et al., and further in view of U.S. Patent No. 5,909,075 to Heimark. Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of Clark et al. and Lanigan et al., and further in view of Seung et al. Claim 23 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Man et al. in view of Brinkmeyer et al., and further in view of Lanigan et al.

As described above, claims 7-9 and 13-24 depend from claim 1, which is allowable. The teachings of Brinkmeyer, Clark, Lanigan, Mueller, Heimark, and Seung do not cure the deficiencies of Man discussed above in reference to claim 1. Therefore, claims 7-9 and 13-24 are allowable for the same reasons and also because they recite additional patentable subject matter.

VI. Conclusion

In light of the above, Applicants respectfully request entry of the Amendment and allowance of claims 1, 2, 4-11, and 13-24. The Examiner is invited to contact the undersigned at the below number to further discuss this application if necessary.

Respectfully submitted,



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